

**Minutes of Technical Work Group Meeting  
June 10, 1998**

**DRAFT**

**Presiding:** Bruce Moore, USBR (Vice-Chairperson)

**Committee Members Present:**

Clifford Barrett, RW Beck & Assoc.  
Dave Cohen, Trout Unlimited  
Wayne Cook, UCRC  
Wm. Davis, EcoPlan Assoc./CREDA  
Kurt Dongoske, The Hopi Tribe  
Christopher Harris, ADWR  
Norm Henderson, GCNRA  
Amy Heuslein, BIA

Gene Jencsok, CWCB  
Robert King, UDWR  
Phillip S. Lehr, CRCN  
Don Metz, USFWS  
Clayton Palmer, WAPA  
Bill Persons, AGFD  
John Shields, Wyoming State Engineer's Ofc  
Fred Worthley, CRBC

**Committee Members Absent:**

Mark T. Anderson, USGS  
Kerry Christensen, Hualapai Nation  
Joe Dishta, Pueblo of Zuni  
Alan Downer, Navajo Nation

Tom Moody, Grand Canyon Trust  
Andre Potochnik, Grand Canyon River Guides  
Southern Paiute Consortium Representative  
Robert Winfree, NPS

**Alternates Present:**

Timothy Begay, Navajo Nation  
Tom Latousek, American Rivers  
Jeff Phillips, USGS

**Alternate For:**

Alan Downer, Navajo Nation  
American Rivers  
Mark T. Anderson, USGS

**Other Interested Persons Present:**

Debra Bills, USFWS  
L. David Garrett, GCMRC  
Barry Gold, GCMRC  
Ruth Lambert, GCMRC  
Mike Liszewski, GCMRC  
Steven Lloyd, UCR-USBR  
Ted Melis, GCMRC  
Erzebet Merenyi, University of Arizona

Richard Myerhoff, EcoPlan Associates  
Randy Peterson, UCR-USBR  
Mark Phillips, Trout Unlimited  
Mary Reece, USBR (Phoenix)  
Larry Stevens, GCMRC  
Bill Vernieu, GCMRC  
Bruce Williams, LCR-USBR  
Michael Yard, GCMRC

**Recorder:** Serena Mankiller, GCMRC Secretary

**Convened:** 8:15 a.m.      **Adjourned:** 4:15 p.m.

**MEETING OPENING AND ADMINISTRATIVE ITEMS**

**Welcome:** Robert Winfree, the Chairperson, was absent. Bruce Moore, Vice-Chairperson, convened the meeting and welcomed committee members, member alternates, and guests.

**Review of Agenda:** The Vice-Chairperson reviewed the agenda. Additions were made.

**Attendance Sheet:** Distributed.

**Review of Minutes:** (Attachments 1-3) Minutes of March 17-18, 1998 and April 7-8, 1998 were approved. Minutes of May 18-19, 1998 were reviewed and approved.

*Recommendation:* TWG members shall contact the GCMRC Secretary regarding suggested revisions to May 18-19, 1998 minutes.

### **Other Administrative Business**

Federal Register Notice: Meetings are being noticed as required.

Additional TWG Meeting on July 20, 1998: An additional meeting was added on July 20, 1998 from 1-4 p.m. at the Embassy Suites in Phoenix. Reclamation will add the meeting to the Federal Register Notice. Meeting materials will be distributed by July 13, 1998.

TWG Meeting Attendance: Reminder to official members to arrive to meetings on time or to arrange in advance to send alternate. Sixteen members constitute a quorum and allow voting.

Minutes Attachments in Electronic Formats: Steve Lloyd reminded the group that meeting materials and presentations need to be posted on the web sites as attachments to the minutes in order to have a complete record of the TWG meetings for review and archiving purposes. Bruce Moore reinforced that records of official meetings need to be complete, and electronic formats of documents need to be submitted by the authors/presenters.

*Recommendation:* Please bring presentation handouts on a disk or e-mail them to the GCMRC Secretary. Materials may be submitted in any format. This requirement will not be added to the TWG Operating Procedures document at this time, but may possibly be added later.

Electronic Distribution of Meeting Materials to the TWG: GCMRC has a need to streamline the materials distribution procedure (of attaching four different formats of each document) to the TWG. Hyperlinks can be embedded in e-mails which will link to the web site. Documents posted in .pdf format which can be read by downloading Adobe Acrobat Reader (free software from the worldwide web). The TWG felt that a write-enabled format should be available for documents requiring input. Members without internet access will continue to receive their documents via fax/mail/Federal Express. The web site will be redesigned soon.

*Recommendation:* On a trial basis, e-mail messages will contain hyperlinks to the GCMRC AMWG/TWG web site instead of multiple-format attachments. Documents posted on the site will be in .pdf and .html formats. A means to respond (e-mail link) will be provided on the web site if you encounter a problem opening a document (GCMRC will support that for TWG members). Documents requiring TWG input will also be posted word processing formats. If a member needs another format, please contact the GCMRC Secretary.

TWG Operating Procedures: (Attachment 4) Steve Lloyd distributed the official Operating Procedures which have been signed by the Chairperson.

*Recommendation:* The TWG adoption date (TWG Operating Procedures, page 6) will be corrected to 1997. A position paper regarding TWG review of SAB technical advice and scientific review information submitted to the AMWG will be included in the 30-day AMWG mailing for consideration at its July 1998 meeting.

AMWG Charter Renewal: (Attachment 5) Steve Lloyd distributed a proposed position paper on the biennial renewal of the AMWG Charter for comment by the TWG. It includes a proposed revision to the procedure for publishing of upcoming TWG and AMWG meetings in newspapers to comply with public notification requirements. The new procedure is intended to reduce expenses. He requested a recommendation from the TWG to the AMWG for its consideration in renewal of the charter.

*Recommendation:* Submit overall comments on the position paper to Steve Lloyd by June 12, 1998. The document including any revisions will be posted on the USBR AMP web site. The TWG recommended the position paper be forwarded in the 30-day mailing to AMWG for consideration at its July 1998 meeting.

AMP/PA Integration: Kurt Dongoske reported that no comments have been received on the proposal presented by he and Michael Yeatts (The Hopi Tribe) to the TWG in March, 1998. He plans to finalize the document, incorporating the schedule of PA activities with the GCMRC's out years. He will bring the revised document back to the TWG for review, comment, finalization and recommendation for submission to the AMWG. Dave Garrett stated that he would like to see it as a formal document of the TWG.

*Recommendation:* Kurt Dongoske shall prepare a final draft for the TWG's review and recommendation at its July 23, 1998 meeting.

Meeting on June 9, 1998: The Vice-Chairperson stated that a team of interested parties met for review and discussion of the FY98-FY2000 AMP budget and budget templates and the Lake Powell draft 5-Year Plan, including the proposed budget.

*Activities of the team meeting:*

Out Year Budget: Proposed budget process protocols (Attachment 6a, dated 6-9-98; Attachment 6b, revised by TWG on 6-10-98) were suggested. The FY98 and FY2000 AMP budget template (Attachment 6c) was reviewed and discussed. More detail on the USBR and GCMRC sections of the AMP budget for FY99 and FY2000 (Attachment 6d, distributed to the TWG on 6-3-98) was requested to be provided to the TWG, and Bruce Moore and David Garrett will provide the detail at the next TWG meeting. This level of specificity in budget detail is suggested to be the template for future AMP budgets for the TWG and the AMWG to review. (See topic: "FY2000 AMP Budget and Out Year Budget Process" below, for the TWG's review and recommendation information.)

**Lake Powell 5-Year Plan:** The draft plan for FY2000-2004 (Attachment 7a, dated and distributed to the TWG 6-2-98) including a proposed budget, were reviewed. Minor additions and corrections were noted. The suggested revisions will be presented to the TWG on June 10, 1998 for adoption. (See topic: "Lake Powell Long-term Program Results" below, for the TWG's review and recommendation information.)

**Temperature Control Device Workshop:** Bruce Moore reported that the draft EA on the TCD is planned to be finalized within two weeks. He announced that the USBR is planning a one-day workshop for interested parties to discuss and comment on the EA document in early- to mid-July. The draft EA will be distributed to about two weeks prior to the workshop. The comments will be taken to the AMWG meeting July 21-22, 1998 for its consideration.

*Recommendation:* Interested parties in the TCD Workshop will meet on July 1, 1998, at the Phoenix Airport from 9:30 a.m. to 4 p.m.

#### **AD HOC COMMITTEE STATUS REPORTS FOR AMWG PRESENTATION ON JULY 21-22, 1998:**

**Spillway Gates Extensions Ad Hoc Group Update:** (Attachment 8) Bruce Moore reported that revisions to the document were made based on comments received from the TWG. He clarified that the 4.5 foot extensions are for resource purposes and the 8 foot extensions are for dam safety purposes. The 8 foot extension language was removed from the document for clarification purposes. The document contains a TWG position paper. If approved by the AMWG, the Federal Register Notice regarding the decision to indefinitely postpone installation of the gate extensions and keep flood frequency to 1:100 will go directly to Commissioner Martinez for signature, as he has delegated authority to sign for the Secretary on GCD issues. Norm Henderson will send comments. Gene Jencsok wants to review substantial comments prior to incorporation.

*Recommendation:* Submit any changes or comments to Bruce Moore by Friday, June 12, 1998. Norm Henderson shall send his comments to interested parties too. The document will be added to the 30-day AMWG mailing.

**1998 BHBF Science Plan/Funding, Report Process/Outcome; 1999 BHBF Plan:** Bruce Moore stated that the TWG, in its May 1998 meeting, recommended to cease 1998 BHBF compliance activities because a hydrologic trigger does not seem imminent. Pursuant to TWG's recommendation, Reclamation will work towards a programmatic compliance process for future BHBFs between the months of January to July. At its January 1998 meeting, the AMWG had charged the GCMRC with investigating duration, assessment and impacts, including flow parameters which are outlined in Tom Moody's paper (Attachment 9, memo dated 5/30/98; proposal dated 5/19/98). In order for Reclamation to begin doing an assessment and request consultation, it needs input from the TWG on how to proceed. Reclamation still needs to formally obtain from USFWS a definition of "establishment" of the second KAS population. The TWG needs to provide a status report on its charge to the AMWG. The TWG discussed the need to streamline the process amongst the state and federal agencies which have the power to accomplish or delay compliance. Suggestion to form an action team of state and federal agencies

and charge it with the assignment of examining the issues and determining whether or not compliance can be accomplished for a BHBF in January. Amy Heuslein stated that cultural resources representation is needed on the team. Suggestion to have a half-day meeting of the TWG on July 20, 1998 to review the most viable opportunities the compliance team has examined.

The Compliance Team is assigned to meet before the July TWG meeting to:

- 1) Develop a two-tiered schedule and approach for accomplishing compliance for a 1999 BHBF for the months of January through July:
  - a. including flows up to 45,000 cfs;
  - b. including flows from 45,000 cfs and greater;
    - 1) including compliance for cultural resource properties for flows greater than 45,000 cfs, (consultation with Reclamation and NPS required);
  - c. not including fluctuating flows or seasonally-adjusted steady flows.
- Investigate the feasibility and legal obstacles of the agencies having compliance completed and ready to run the BHBF on January 1, 1999 (if a hydrologic trigger occurs)
- Report to the TWG at its July 20, 1998 meeting the most viable opportunities they were able to determine. Report any legal obstacles that may prevent accomplishment of the assignment.

*Recommendation:* Reclamation will initially convene the compliance action team which will meet before July to accomplish the objectives outlined above. The team will consist of representatives from: Reclamation, Reclamation Archaeological Representative (to represent cultural resource interests), GCMRC (Barry Gold), USFWS (Debra Bills), AGFD (Bill Persons), NPS.

Suggestion to forward a letter from non-federal AMWG representatives to the Secretary of the Interior encouraging him to remind/reinforce to his agencies that accomplishment of compliance related to a 1999 BHBF is to be given priority in management of their work assignments.

*Recommendation:* Cliff Barrett and Wayne Cook will draft the letter, obtain signatures, and forward it to the Secretary of the Interior.

**Management Objectives and Prioritized Information Needs:** David Garrett reviewed the history of the Management Objectives Ad Hoc Group. There were originally 19 objectives and 43 information needs. There are now 34 objectives and 167 information needs. Some overlap exists in some of the information needs. The TWG has received some negative input regarding the prioritization process. Final comments were allowed on the document (Attachment 10a, dated 5-1-98) after the last TWG meeting before it was to be forwarded to the AMWG for adoption. Extensive revisions to management objectives and information needs were received from Andre Potochnik and Kelly Burke (Attachment 10b, dated 5-28-98). GCMRC met with them and consolidated the changes to two Management Objectives and six Information Needs.

Dave Garrett inquired if the TWG would support the new revisions to the document prior to the AMWG meeting. A fax was received this morning from Andre Potochnik for the TWG to review which (Attachment 10c, dated 6-10-98) requested that the river guides meet one time at TWG's July 23, 1998 meeting to discuss their changes. The TWG was receptive to this request. He is concerned that the changes will not be included in the GCMRC Strategic Plan. The TWG felt that the revisions could have been considered earlier in the process, the new information needs were not included in the prioritization process, and the deadline had passed for significant changes. The changes can be considered during the next annual review of the management objectives document for incorporation into GCMRC's long-term work plan after FY99 (not prior to FY2000). John Shields requested a minor technical revision to the "Background" paragraph.

*Recommendation:* John Shields' revision will be incorporated into the document. On motion duly made, seconded and carried, the Management Objectives document that was approved at the last TWG meeting (dated 5-1-98, including the minor technical revision of 6-10-98) for submittal to the AMWG be sent forward to the AMWG for approval, that concerns that have been raised by the recreation representatives be considered in September when the TWG reviews the full Management Objectives to develop the next annual plan (FY2000). It is noted that this decision was unanimous.

Bruce Moore will present the Management Objectives and Information Needs document (revised 6-10-98) to the AMWG in July for adoption, but it will be noted to the AMWG in an attached memo that the TWG would like to continue the dialog with the recreation interests for one meeting.

**FY2000 AMP Budget and Out Year Budget Process:** The TWG reviewed out year protocols (Attachment 6a) and budget and future template information (Attachments 6c-d) discussed by the interested parties at their meeting on June 9, 1998:

Out Year Budget: The TWG reviewed the FY98-FY2000 budget information. Minor revisions were made to the budget protocols (Attachment 6b). "Section IV Bureau Support" was moved under "GCMRC Section A.Contract Services." Further breakdown was requested from Reclamation for the category: Administration of TWG Staff Support. Further breakdown was requested from GCMRC for In-house Studies; Information Technologies Program; GCMRC Contract Support. Studies are to be specified for Unsolicited Tribal Proposals. A need was identified to clarify categories in the annual planning document. A five-year program will be drafted in the fall, starting with FY2000. TWG will have to approve the detailed FY2000 Annual Plan and detailed budget. The Schedule C budget template will include the previous year, current year and out year. Budget detail/explanation requested from Reclamation at the May 18-19, 1998 TWG meeting which was to be presented at the June 10, 1998 TWG meeting has not yet been finalized.

*Recommendation:* The TWG approved the revised protocols and the detailed template for future AMP budgets. Clarification of categories shall be contained in the annual planning document for the TWG's reference during budget reviews. Reclamation is to provide the budget detail/explanation (requested at the May 18-19, 1998 TWG meeting) for the next TWG and

AMWG meetings. GCMRC to provide additional budget detail requested today for the next TWG meeting. GCMRC is to provide the budget detail document and a cover letter with the budget templates and protocols for the AMWG meeting.

**FY99 Budget Process:** Norm Henderson stated that he would like to see a process developed to evaluate ways of reducing management and administration costs of the overall adaptive management program in order to put more money into research. A suggestion was made to convene a small group to comprehensively review alternatives, costs and benefits and report back to TWG for consideration.

*Recommendation:* Clayton Palmer and Norm Henderson will form an ad hoc group. In consultation with Reclamation and GCMRC, the ad hoc group will develop a process and recommendations for ways to reduce costs, create efficiencies and streamline the budget process. It will provide information back to the TWG by late August, 1998. The topic will be placed on the agenda for the September 1998 TWG meeting.

**BHBF Resource Criteria Ad Hoc Group:** (Attachments 11a-h) Barry Gold reviewed the BHBF Resource Criteria package distributed to the TWG (Attachment 9a, e-mail dated 7-2-98). The Effects Impacts Matrix was revised. He reviewed the history of criteria development and confirmed that the TWG has not requested any revisions to the criteria. He stated that the State of the Colorado Riverine Ecosystem Report (SCORE Report) will be reviewed annually utilized to develop, along with researchers, a narrative for biological resources. This will help us be prepared in January for a January-July BHBF if the opportunity presents itself. Every October-December when the new SCORE report is being revised, the biological resources narrative and resources effects matrix will be updated. Barry Gold stated that, pursuant to the request at the last TWG meeting, a comparison table (Attachment 11b) has been added to the Resources Effects Matrix to better explain the long-term, beneficial resource effects of a BHBF which the TWG may use as a communication tool for their AMWG members. GCMRC would like to continue to use the tools and process that are in place, with the addition of the comparison table, to evaluate the effects of a high flow event on the resources based on the objectives described for the flow geared to the No Action alternative that would most likely occur if a trigger is met. This is not meant to substitute for compliance, but is more issue specific. The programmatic compliance will be an event specific activity that links to the broader compliance.

*Recommendation:* Final comments will be accepted on these documents, and may be submitted to Barbara Ralston by June 19, 1998. The Compliance Team will utilize the information at its upcoming meeting. The package will be added to the BHBF information for the next AMWG meeting for a progress report.

**Science Advisory Board Ad Hoc Group:** Bruce Moore reported (for Barry Gold) that the SAB document has been prepared and will be forwarded in the 30-day mailing to AMWG for approval. If the SAB RFP is ready, it will also be included in the mailing to AMWG. It was clarified to the TWG that the RFP will be posted on the GCMRC AMWG/TWG web site at the same time it is released to the public. The TWG may still recommend people to serve on the board.

**State of Resources Report Ad Hoc Group:** Bruce Moore (for Larry Stevens) reported that no comments were received on the annual report format.

*Recommendation:* The report will be included in the 30-day distribution to the AMWG. Larry Stevens is planning to do a visual presentation to the AMWG at its July meeting.

**Compliance:** A Compliance Team was formed. See discussion and recommendations under the topic, "1998 BHBF Science Plan/Funding, Report Process/Outcome; 1999 BHBF Plan" in these minutes.

#### **OTHER ADAPTIVE MANAGEMENT WORK GROUP ITEMS**

**Review AMWG Mid-year Meeting Agenda:** (Attachment 12) Bruce Moore reviewed the draft AMWG Agenda for the July 21-22, 1998 meeting to be held at the Embassy Suites (44<sup>th</sup> & McDowell Roads), Phoenix, AZ. Materials for this meeting will be distributed by the USBR 30 days prior to the meeting.

**Information Technology:** (Attachment 13) Michael Liszewski distributed an outline and survey to determine interest in a proposed Information Technology Program Fall Workshop in the fall. The workshop will cover information technology developed by the GCMRC for providing the AMWG/TWG members with data and information. TWG members to please provide interested AMWG members with a copy.

*Recommendation:* TWG and/or AMWG members please complete and return their surveys to Michael Liszewski.

**Remote Sensing Presentation:** (Attachment 14) Mark Phillips and Dr. Erzebet Merènyi (University of Arizona Lunar and Planetary Laboratory) described an opportunity for the GCMRC to become co-investigators on a research project which will assist in its remote sensing technology efforts. It is a two-year grant (up to \$300,000) being offered by NASA for remote sensing research work, and it is seeking a high-profile project such as ours to align with. It will use hyperspectral imaging, which is flown on an aircraft and gives data which can be used to analyze biological, cultural and physical resources, such as biological stresses on plants and sediments loads in the river (including suspended sediments), etc. Possibly, techniques can be developed so the researchers can map and monitor the sediment loads without lowering the flows to 8,000 cfs. The grant is being written in conjunction with the GCMRC, and a letter of support is needed from the TWG that contains a list of stakeholders. David Garrett reinforced that this type of technology will better meet the needs of the stakeholders.

*Recommendation:* The TWG recommended that letters be prepared for Robert Winfree's and Tom Moody's signatures by GCMRC. Wayne Cook will also prepare a letter for signature by the four Upper Basin States. The deadline is June 26, 1998. Return the letters to Mark Phillips by June 19, 1998. The letters will be attached to the proposal.

**Southwest Strategy Overview:** (Attachments 15a-e) Amy Heuslein reviewed the Southwest Strategy. It is being developed first with federal agencies involved in natural resources management in Arizona and New Mexico, as a result of potential litigation by environmental groups regarding endangered species. Its goal is to maintain and restore the cultural, economic and environmental quality of life (e.g., preventing potential shutdowns of activities on public lands). Ms. Heuslein reviewed organizational/communications structures. Offices will be located in New Mexico and Arizona. She reviewed contacts and issue workgroup lists. One workgroup will focus on streamlining Section 7 consultation. Meetings will be held in Phoenix on July 1 for federal employees and in Flagstaff on July 7 for federal, state and tribal nations. Other agencies and the public will be added in the future. A Regional Directors Meeting is held monthly.

**Hydrologic Forecasts:** (Attachments 16a-c) Randy Peterson there is no risk for low summer flows. Inflows have been approximately 50,000 cfs but will drop to approximately 30,000 cfs due to recent high elevation cool weather. The two-week outlook is much below normal temperatures. Lake Powell will finish the year between 0-5 feet from full. Average releases will be 19,500 cfs during the week, 14,000-15,000 cfs on the Sundays (through August, 1998).

**Lake Powell Long-term Program FY2000-2004 Results:** David Garrett reviewed the Lake Powell five-year plan and budget which covers FY2000-2004 (Attachment 7a, dated June 2, 1998). He reviewed revisions suggested by the interested parties at their meeting on June 9, 1998, which were acceptable to the TWG. Other minor revisions were made on June 10, 1998 (reflected in Attachment 7b), including: Management Objectives statements were revised to reflect the current language of the Lake Powell section of the GCD Management Objectives document (dated 5-1-98); specification of years in which work is scheduled for implementation through completion; budget information specific to that work is also to be added.

The TWG discussed the possibility of negative effects on outside research programs (dependent on GCMRC's data) if the FY2000-2004 plan is not approved by the AMWG, and GCMRC's activities (outlined Appendix B) are discontinued. Appendix B lists current water quality monitoring activities and procedures; and not the proposed science and data synthesis, conceptual modeling, aquatic ecosystem impact assessments and possibly fish impacts of dam operations. Amy Heuslein requested the GCMRC contact the Navajo Nation regarding potential negative effects on its research programs. David Garrett explained that the general purpose of the conceptual modeling effort is to potentially identify natural- and operations-related factors and their effects on Lake Powell. This purpose is similar to what we are trying to achieve with the mainstem model. It is planned to have the TWG assist in design of the Lake Powell conceptual model in the fall. After discussion, the TWG forwarded the FY2000-2004 Plan to the AMWG pending the AMWG's decision on the continuation of GCMRC's Lake Powell program.

*Recommendation:* The TWG recommended that David Garrett forward a memo to the AMWG showing accomplishments by the GCMRC Lake Powell program work and listing GCMRC activities which will be discontinued if work past FY99 is not approved. The five-year plan (revised on 6-10-98) was approved by the TWG for forwarding to the AMWG for decision. The TWG will recommend to the AMWG that this five-year program plan be implemented if the

AMWG approves Lake Powell work past FY99. The TWG members shall brief their AMWG members so they are prepared to make a decision at the AMWG meeting.

Lake Powell FY99 Plan: David Garrett clarified that the FY99 Lake Powell program plan will be basically the same program as FY98.

Lake Powell Assessment/Response to Comments: (Attachment 7c) On June 9, 1998, the interested parties reviewed the "Response to Comments" by Bill Vernieu and Susan Hueftle to EcoPlan Associates' comments on the Lake Powell Assessment (letter dated 4-29-98 and discussed at the TWG's 5/18-5/19/98 meeting). A copy of the responses were made available to the TWG on June 10, 1998. Bill Davis will review responses to his firm's comments. Comments from Jerry Miller (USBR) will be ready next week. Suggestion to provide the AMWG with an updated version. Bill Vernieu said the Final Assessment will not be available before the AMWG 30-day mailing, but AMWG will receive the most recent version at its next meeting.

#### **MEETING REVIEW AND WRAP-UP/NEW BUSINESS**

Public Comment: Public comment was requested at the end of each major topic. No comments.

#### **Upcoming TWG Meetings:**

**July 20, 1998:** 1 p.m. to 4 p.m., Embassy Suites (44<sup>th</sup> & McDowell Roads) - Phoenix

##### Agenda Items:

- TWG position/project status for issues on AMWG agenda
- Compliance Team Findings (B. Gold)
- Impacts to Power from 1997 High Flow (C. Palmer)

**July 23, 1998:** 8 a.m. to 12 p.m., Embassy Suites (44<sup>th</sup> & McDowell Roads) - Phoenix

##### Agenda Items:

- AMP/PA Integration (K. Dongoske/M. Yeatts)

The TWG has agenda items past July, but an August meeting will not be set until after the July AMWG meeting. The TWG had previously considered taking August off from its schedule.

There being no further business, the Chairperson adjourned the meeting.

Respectfully submitted,

Serena Mankiller, GCMRC Secretary

## Key to Acronyms

ADWR - Arizona Department of Water Resources	PA - Programmatic Agreement
AGFD - Arizona Game & Fish Department	Reclamation - United States Bureau of Reclamation
AGU - American Geophysical Union	RFP - Request For Proposal
AMP - Adaptive Management Program	RPA - Reasonable and Prudent Alternative
AMWG - Adaptive Management Work Group	SAB - Science Advisory Board
AOP - Annual Operating Plan	SCORE Report - State of Colorado Riverine Ecosystem Report
BA - Biological Assessment	SOI - Southern Oscillation Index
BHBF - Beach/Habitat-Building Flow	TCD - Temperature Control Device (Glen Canyon Dam)
BHTF - Beach/Habitat Test Flow	TCP - Traditional Cultural Property
BIA - Bureau of Indian Affairs	TES - Threatened and Endangered Species
BO - Biological Opinion	TWG - Technical Work Group (Glen Canyon)
BOR - Bureau of Reclamation	UCR - Upper Colorado Region (of the USBR)
CAPA - Central Arizona Project Assn.	UCRC - Upper Colorado River Commission
CRBC - Colorado River Board of California	UDWR - Utah Division of Water Resources
CRCN - Colorado River Commission of Nevada	USBR - United States Bureau of Reclamation
CRMP - Colorado River Management Plan	USFWS - United States Fish & Wildlife Service
CREDA - Colorado River Energy Distributors Assn.	USGS - United States Geological Survey
CRSP - Colorado River Storage Project	WAPA - Western Area Power Administration
CWCB - Colorado Water Conservation Board	
DOI - Department of the Interior	
EA - Environmental Assessment	
EIS - Environmental Impact Statement	
ENSO - El Niño Southern Oscillation	
ESA - Endangered Species Act	
FACA - Federal Advisory Committee Act	
FWS - United States Fish & Wildlife Service	
FY - Fiscal Year	
GCD - Glen Canyon Dam	
GCMRC - Grand Canyon Monitoring and Research Center	
GCNRA - Glen Canyon National Recreation Area	
GCPA - Grand Canyon Protection Act	
HBC - Humpback Chub (endangered native fish)	
IEDA - Irrigation and Electrical Districts Association of Arizona	
KAS - Kanab Ambersnail (endangered native snail)	
KAWG - Kanab Ambersnail Work Group	
LCR - Little Colorado River	
LCR-USBR - Lower Colorado Region of the United States Bureau of Reclamation	
MAF - Million Acre Feet	
NAU - Northern Arizona University (Flagstaff, AZ)	
NEPA - National Environmental Policy Act	
NHPA - National Historical Preservation Act	
NPS - National Park Service	